

REMARKS/ARGUMENTS

Status of Claims

Claims 1-3 and 8-11 are pending, with claim 1 being the only independent claim.

Claims 4-7 have been cancelled, without prejudice.

Claims 1-3 and 8-9 have been amended.

New dependent claims 10 and 11 have been added.

Overview of the Office Action

Claims 1-8 stand rejected under 35 U.S.C. §102(b) as anticipated by U.S. Patent Application Publication No. 2001/0020346 (Schingnitz).

Claim 9 stands rejected under 35 U.S.C. §103(a) as unpatentable over Moritz.

Claims 1-8 stand rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1-17 (of U.S. Patent No. 6,827,912).

Claims 9 stands rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1-17 of Schingnitz in view of U.S. Patent No. 3,128,164 (Moritz).

Summary of subject matter disclosed in the specification

The following descriptive details are based on the specification. They are provided only for the convenience of the Examiner as part of the discussion presented herein, and are not intended to argue limitations which are unclaimed.

A reactor wall is configured with a pressure shell (2) and an inner cooling wall (9) spaced radially inwards from the inner surface of the pressure shell. The opposing inner and outer surfaces of the shell and the cooling wall, respectively, thus, define a cooling gap (3) traversed by a cooling medium, such as water. The inner surface of the cooling wall defines a gasification chamber receiving materials to be processed at a high temperature. The cooling wall is coated with a refractory ramming mass (5) providing a temperature gradient between the cooling wall and the chamber. Since a temperature within the ramming mass is substantially lower than a melting temperature of the material to be burnt in the chamber, ash flying adjacent the ramming mass gradually settles on and solidifies on the inner surface of the cooling wall (4) so as to form a layer of solid slag (6). Upon gradual equalization of the temperatures, outer layers of solid slag melt and flow through a discharge port.

The cooling gap of the inventive reactor is, thus, easily formed and, as a result of its ring shape provides a substantially uniform flow of the cooling medium. As a consequence, the cooling medium and the cooling wall and the ramming mass are in a substantially uniform and effective heat exchange, which, in turn, leads to an efficient processing of waste materials.

Descriptive summary of the prior art

Schingnitz

A reactor is configured with an outer shell (4), and a plurality of half-pipes welded to the inner surface of the shell (4) so as to define a plurality of isolated gaps each traversed by a cooling medium.

Moritz

A system A shell (1) is provided with a central draft tube (2) spaced inwardly from the shell and separating an inner oxidation zone (3) from an outer cracking zone (4).

35 U.S.C. §102(b) rejection

Independent claim 1 has been amended to recite a cooling wall's outer surface spaced from a inner wall of a shell so as to define a ring-shaped gap.

Schingnitz does not teach or suggest a structure as recited in amended claim 1.

Schingnitz discloses a gap (12) receiving a plurality of half-pipes welded to the inner surface of a shell (4). The outer surface of each pipe, thus, defines a cooling gap traversed by a cooling medium. Since the end regions of the outer surface of the half-pipes are welded to the inner surface of the shell, each gap is delimited by the arcuate inner periphery of a respective half-pipe that typically causes a formation of "dead flow zones". This, in turn, provides for a non-uniform heat exchange between the components of the reactor. As a consequence, a process for gasifying waste materials is not as efficient as the process carried out by the reactor recited in independent claim 1 in which the inner and outer surfaces of the shell and cooling wall, respectively, are spaced apart to define the ring-shaped gap, which provides for a substantially uniform heat exchange between the components of the reactor.

Thus, Schingnitz does not teach the following element recited in amended claims:

a cooling wall having an outer surface spaced radially inwards from said inner surface of a pressure so as to define said ring-shaped gap with said inner surface of said pressure shell through which gap a cooling medium is circulated.

As a consequence, Schingnitz is not anticipatory, and claim 1 as amended is allowable. Withdrawal of the rejection under 35 U.S.C. §102(b) of claim 1 is respectfully requested.

Claims 2, 3, and 8 depend either directly or indirectly from amended claim 1 and, thus, benefit from allowability of this independent claim.

35 U.S.C. §103(a) rejection

Claim 9 depends from amended claim 1. Moritz does not suggest any of the elements absent in Schingnitz and, thus, cannot remedy the deficiencies of the base reference. Therefore, claim 9 is allowable and withdrawal of the §103(a) rejection is respectfully requested.

Obviousness-type double patenting rejection

A terminal disclaimer obviating this rejection is submitted herewith.

Conclusion


Based on all of the above, it is respectfully submitted that the present application is now in proper condition for allowance. Prompt and favorable action to this effect and early passing of this application to issue are respectfully solicited.

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It is believed that no fees or charges are required at this time in connection with the present application; however, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,

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